Message

From: Alexander, Shanna [Alexander.Shanna@epa.gov]
Sent: 9/20/2021 9:47:38 PM
To: Adams, Glenn [Adams.Glenn@epa.gov]
CC: Amoroso, Cathy [Amoroso.Cathy@epa.gov]; Richards, Jon M. [Richards.Jon@epa.gov]; Frederick, Tim [Frederick.Tim@epa.gov]
Subject: RE: Oak Ridge Comparison Table
Attachments: Oak Ridge Fish Comparison Criteria Table 20SEP2021r.xlsx

Attached is the revised spreadsheet using just 15 fish meals (not 14.73 or 15.08).

From: Adams, Glenn <Adams.Glenn@epa.gov>
Sent: Monday, September 20, 2021 5:23 PM
To: Alexander, Shanna <Alexander.Shanna@epa.gov>
Cc: Amoroso, Cathy <Amoroso.Cathy@epa.gov>; Richards, Jon M. <Richards.Jon@epa.gov>; Frederick, Tim <Frederick.Tim@epa.gov>
Subject: RE: Oak Ridge Comparison Table

Sorry, I meant to also ask if you have this in Excel?

From: Adams, Glenn
Sent: Monday, September 20, 2021 5:21 PM
To: Alexander, Shanna <Alexander.Shanna@epa.gov>
Cc: Amoroso, Cathy <Amoroso.Cathy@epa.gov>; Richards, Jon M. <Richards.Jon@epa.gov>; Frederick, Tim <Frederick.Tim@epa.gov>
Subject: RE: Oak Ridge Comparison Table

Thanks Shanna, this is what I needed to answer the RA's question. I do have one other question though. For meals/year wouldn't both values just round to 15 (two significant digits)? We do not usually use four significant digits.
Glenn

From: Alexander, Shanna <Alexander.Shanna@epa.gov>
Sent: Monday, September 20, 2021 5:11 PM
To: Adams, Glenn <Adams.Glenn@epa.gov>
Cc: Amoroso, Cathy <Amoroso.Cathy@epa.gov>; Richards, Jon M. <Richards.Jon@epa.gov>
Subject: Oak Ridge Comparison Table

Glenn,

Below is a summary table comparing the CERCLA site-specific instream water column PRGs (which are equivalent to AWQCs), the Clean Water Act Ambient Water Quality Criteria (using default assumptions), and the end of pipe radionuclide discharge limits based on DOE's proposed range of assimilative capacities (i.e., 3 and 16). Also included for comparison are the current radionuclide discharge measurements for Bear Creek and DOE's 25% DCS values. Note that the site specific values have increased slightly due to the slight change in the fish catch rate from 43% to 42%. This results in an average fish meal estimate of 14.73 instead of the previously calculated 15.08 meals/year.

Radionuclide*	Units	EPA CERCLA Methodology – Site Specific	EPA CWA Methodology - Defaults	Example End of Pipe Effluent Rad Discharge Limit	Example End of Pipe Effluent Rad Discharge Limit	Current Average Discharge Measurements at the EMWMF	DOE Proposal
		Site-Specific Instream	CWA Guidance Defaults				25% DCS Value

		Ambient Water Quality Criteria (AWQC) Equivalent (assuming 15 fish meals/year)	Instream AWQC (34 fish meals/year)	(assuming assimilative capacity of 3)**	(assuming assimilative capacity of 16)**	(current landfill)	
Cs-137	pCi/L	1.22	0.19	3.66	19.52	5.05	750
Sr-90	pCi/L	392	89	1,176	6,272	3.41	275
Tc-99	pCi/L	1,917	297	5,751	30,672	171	11,000
U-238	pCi/L	990	214	2,970	15,840	1.66	188

**These are example calculations only since actual radionuclide discharge limits will be a function of the implemented engineering controls (size of pipe, water flow rate at end of pipe, flow rate of receiving body, etc.).
*** For comparison purposes, the drinking water standard (i.e., MCL) for Cs-137 is 200 pCi/L.

Shanna Alexander, DABT | Toxicologist
Scientific Support Section | Resource & Scientific Integrity Branch
Superfund & Emergency Management Division
U.S. Environmental Protection Agency
61 Forsyth Street, Atlanta, Georgia 30303
☎ (404) 562-8635 | Email: Alexander.Shanna@epa.gov